

No. 704,417.

Patented July 8, 1902.

C. A. WILKINSON.

IGNITER.

(Application filed Oct. 15, 1901.)

(No Model.)

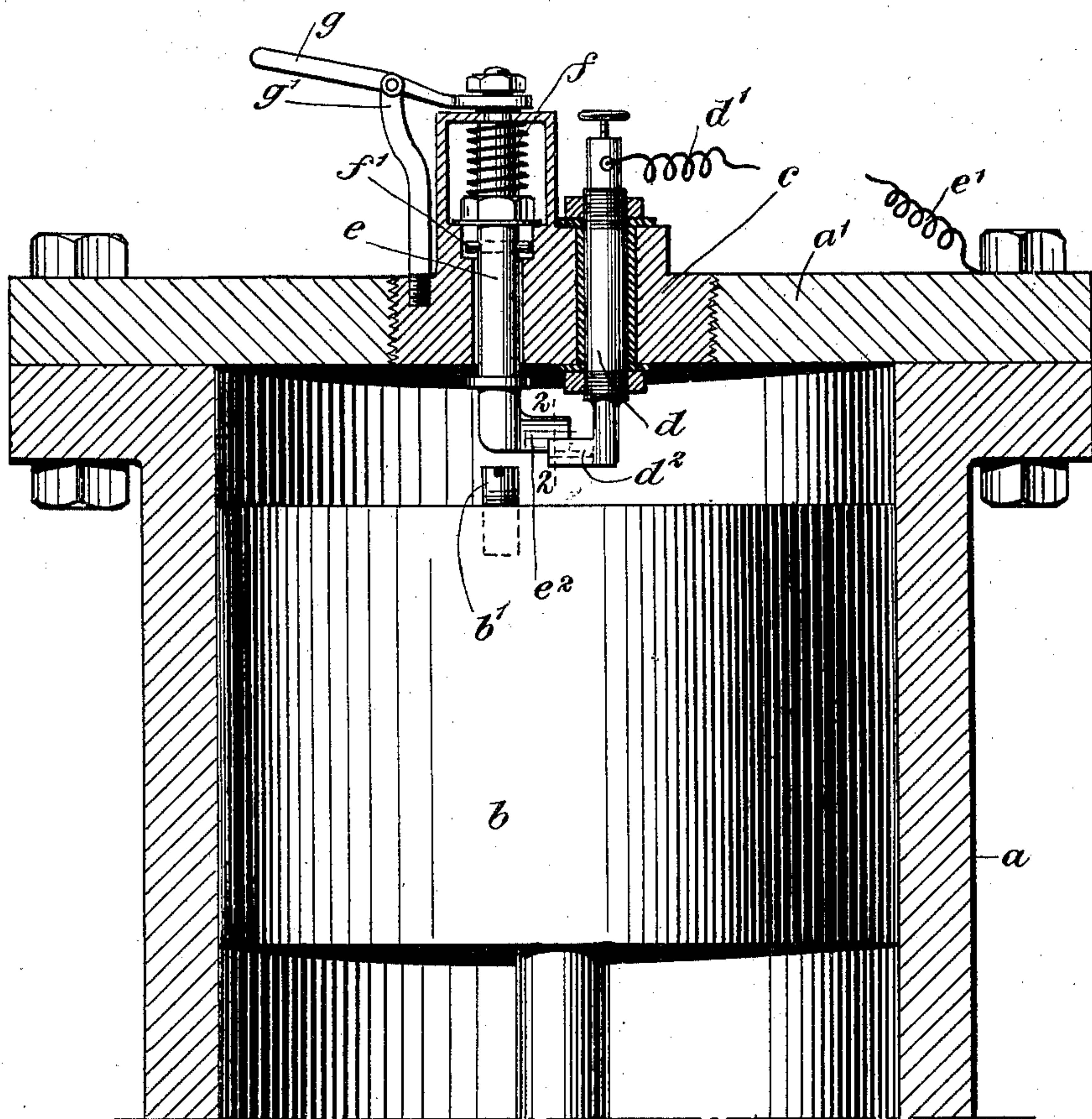


Fig. 1

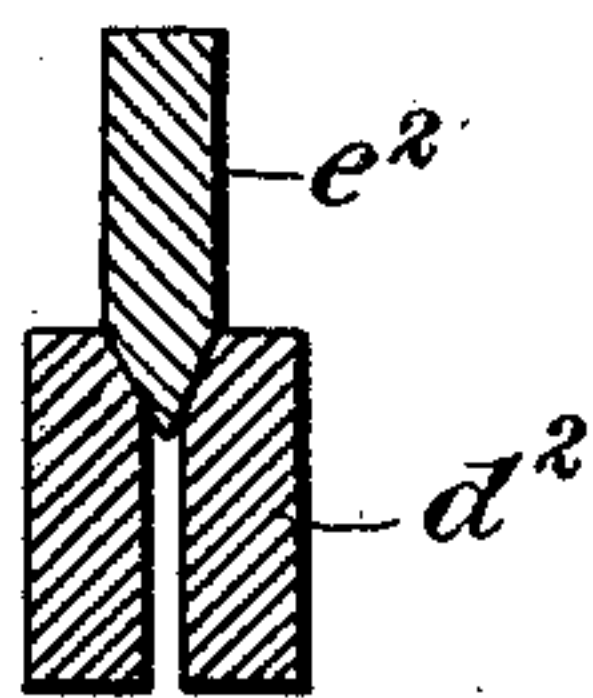


Fig. 2

WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES A. WILKINSON, OF WORCESTER, MASSACHUSETTS.

## IGNITER.

SPECIFICATION forming part of Letters Patent No. 704,417, dated July 8, 1902.

Application filed October 15, 1901. Serial No. 78,728. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. WILKINSON, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and Improved Igniter, of which the following is a full, clear, and exact description.

This invention relates to an electric-spark igniter for internal-combustion engines; and it comprises certain novel features of construction and arrangements which will be hereinafter fully described.

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views.

Figure 1 is a sectional view of the invention, and Fig. 2 is a detail section on the line 2 2 of Fig. 1.

$a$  indicates the cylinder of the engine, and  $b$  the piston, both of which parts may be of any desired construction. Screwed or otherwise fastened in the head  $a'$  of the cylinder is a plug  $c$ , which carries rigidly a pin  $d$ , insulated from the plug, and a pin  $e$ , mounted reciprocally in the plug and having electrical connection therewith. One pole of the source of electrical energy is connected with the insulated pin  $d$ , as indicated at  $d'$ , and the other pole of the electrical source is connected with some part of the cylinder or engine, as indicated at  $e'$ . The inner end of the pin  $d$  is formed with a fork  $d^2$ , as best shown in Fig. 2, and the inner end of the pin  $e$  is turned laterally to form a toe  $e^2$ , which is movable into and out of engagement with the fork  $d^2$  upon the reciprocation of the pin.

$f$  indicates a spring which acts to throw the pin  $e$  inward, and  $f'$  indicates a small key carried transversely in the pin  $e$ . This key  $f'$  plays in a passage in the plug  $c$  and prevents the pin  $e$  from turning in the plug. The piston  $b$  carries a stud  $b'$ , which is arranged to strike the pin  $e$  and move it against the spring  $f$ , so that the toe  $e^2$  is moved out of contact with the fork  $d^2$ .

$g$  indicates a lever connected with the pin  $e$  and located outside of the cylinder, said lever being fulcrumed on an arm or other sup-

port  $g'$  and being provided to permit the manual operation of the pin  $e$ .

The spring  $f$  holds the parts  $e^2$  and  $d^2$  normally engaged, and the circuit is therefore closed. As the piston  $b$  moves inward it strikes the stud  $b'$  against the pin  $e$  and presses it outward against the action of the spring  $f$ . This disengages the toe  $e^2$  from the fork  $d^2$ , and upon the breaking of the electric circuit a spark is caused which ignites the charge. If it be desired to ignite the charge manually, as contradistinguished from automatically, the lever  $g$  should be manipulated to separate the elements  $e^2$  and  $d^2$ . The stud  $b'$  is preferably in the form of a screw, and by regulating the position of this element the time of the ignition of the charge may be controlled. It will be observed that this igniter operates without the action of any external operating mechanism, and, further, since the contacting parts  $e^2$  and  $d^2$  are normally in contact with each other there is no liability of their becoming clogged or foul, so as to destroy effective contact.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An electrical igniter for internal-combustion engines, comprising two conducting-pins mounted in the cylinder-head in parallelism with each other, one of said pins being movable longitudinally by the pressure of the piston thereon, and said pin having a laterally-turned toe at its inner end, and the other pin being insulated from the cylinder-head and having a laterally-turned fork at its inner end, and means for pressing on the first-named or movable pin to hold its toe yieldingly between the members of the fork on the second-named pin.

2. An electrical igniter for internal-combustion engines, comprising a plug fitted in the cylinder-head, a conducting-pin fitted rigidly in the plug and insulated therefrom, said pin having at its inner end a laterally-turned fork, a second pin mounted in the plug

parallel with the first pin and arranged to slide longitudinally under pressure from the piston, said pin having a laterally-turned toe bearing normally between the members of  
5 the fork, means for pressing the second pin yieldingly in place, and a key working between the second pin and the plug to prevent said pin from turning.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. WILKINSON.

Witnesses:

JACOB HOLDIN,

CHARLES E. MCINTIRE.